# Details of Conceptual Design Proposals

## for New Payroll System

1. Concept: Increase and utilize the amount of payroll data received via interface from other computer systems.

Background: Currently there are at least eight (8) (see below) other computer assisted operations within the Agency that contain information essential to the payroll operation. At present much of the information affecting payroll requires manual preparation of an input document by payroll technicians for processing via the four phase system. Other information is processed directly into the payroll system without intervention by the payroll technician, or by input documents prepared by the employee or by a service office (tax exemption, Credit Union, VIP, etc.). However, those documents prepared by the employee or service office are presently sight audited and batched by payroll personnel preparatory to punching via the four phase process. For example, based on a sampling of the total Master File actions per pay period it is estimated that an average of fifty-four (54) percent require manual payroll processing, eighteen (18) percent require sight audit and batching only with the remaining twenty-eight (28) percent being fully processed via automatic interface. Generally speaking, each computer system that impacts on payroll and is in use by the Agency today, requires some manual input of the data from that system by payroll personnel. This is true even of PERSIGN and PERSTEP since contract employee information, even though captured and passed to the payroll process from these respective systems, is not being utilized. Thus maximum use of available automatic interface capabilities should be a major consideration and eventual requirement of a new payroll system.

Specific Data: Listed below are the current computerized systems which contain information needed by the payroll system. A brief description of each system, it's current use and potential effectiveness is also included.

a. PERSIGN: This system contains the basic information to establish an individual in the payroll system and maintain that record in a current status. The interface tape received from PERSIGN contains information applicable to both staff and contract personnel, however, only staff data is used by the payroll system because the payroll computer routines are not designed to accept and process contract information from the PERSIGN system. This information can only be used when received as a four-phase input process.

This means that the payroll technician must manually encode this information so that it can be converted to a four phase process. Modification of the existing payroll programs processing PERSIGN information is essential so that information on contract cases can be processed as is currently being done on staff cases, thereby eliminating both the manual encoding by payroll and the four phase process.

b. PERSTEP: This system provides the information applicable to Within-Grade Increases (WGI's) for both staff and contract personnel. At present only the staff information is being utilized on the biweek pay system. Modifications should be made to allow use of this information on all types of employees.

c. PERINSURE: When operational this system will provide via interface tape pertinent insurance information applicable to both staff and contract personnel. The biweekly payroll system should be modified to accept and use this information on all types of employees when available in this mode.

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e. CREDIT UNION: This system contains the necessary information to establish, change, or stop an allotment from pay for credit to an individual's credit union account. Presently the information is processed into the payroll system by the four phase process based on IBM format cards prepared by the employee and/or the credit union. These cards are forwarded to payroll for batching prior to the four phase process. Consideration should be given to having the credit union input all information via terminal for updating payroll records with basic employee authorization documents being retained by the credit union. This would eliminate not only the payroll batching and four phase process, but should rapidly reduce the number of queries to payroll from employees concerning credit union allotments.

f. Voluntary Investment Plan (VIP): This system contains the necessary information to establish, change, or stop an allotment from pay for credit to an individual's VIP account. Presently the information is processed into payroll via four phase tape with the VIP allotment card in IBM format prepared by the individual and/or the VIP office. These cards are forwarded to payroll for batching prior to the four phase process. Consideration should be given to having the VIP office update allotments via terminal input and retaining the employee authorizations (the same as for the credit union). This would eliminate not only the payroll batching and four phase processing but quickly reduce queries to payroll concerning VIP allotments.

g. CEMLOC: This system is maintained by O/PPP&M and contains information pertaining to the permanent and mailing addresses used for W-2 purposes. Presently computer tapes from the payroll file and the CEMLOC file are matched on a yearly basis to obtain the addresses for the production of W-2's.

Consideration should be given to a more current update via computer interface, possibly on a pay period basis, thus identifying missing addresses throughout the year lessening the year end impact. Additionally this system could, via interface, provide payroll with the necessary address information to determine if appropriate state income taxes are being withheld in compliance with laws of the various taxing jurisdictions.

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2. Concept: Devise alternative methods to input time and attendance data, i.e., Optical Character Reader (OCR) or Cathode Ray Tube terminal (CRT).

Background: One of the major functions in the cycle of any payroll process is the recording of time and attendance data for pay and leave purposes. The current process utilized by payroll involves numerous manual steps that must be completed in

preparation for machine input. Currently payroll is expending approximately 48 work hours and ODP 200 work hours per biweek pay period to process T&A cards. This coupled with the fact that current data is not captured in sufficient detail to allow for adequate retrieval attendant to proper use of a Management Information System dictate that a concerted effort be placed on finding a suitable replacement for the current methods.

Specific Data: Optical Character Reader (OCR)-A detailed study would have to be made of the available systems to determine the practical application of OCR for processing time and attendance reports.

However, preliminary discussions with Agency personnel knowledgeable of this equipment indicate that the state of the art is such that it is feasible to consider OCR as an alternative, especially when considering the capture of daily time and attendance data.

The cost of an OCR system would be commensurate with what we would expect it to do i.e., read different type fonts, read hand script, microfilm documents, etc. While actual cost may vary it is probably safe to say, based on preliminary discussions with the technical representatives of an OCR manufacturer, the basic cost would be approximately $300,000. It is envisoned, however, that an OCR system with good flexibility could be used for more than processing T&A reports and could be useful in processing not only other payroll items, but also data for input into GAS and information from other OF components.

Specific Data: Cathode Ray Tube Terminal(CRT)-Since CRT terminals are presently used by many Agency components with respect to ongoing programs it may be possible to utilize CRT for the recordation of time and attendance data for the majority of personnel paid on the biweekly payroll system. As there are a number of T&A clerks throughout the Headquarters area an in depth study would have to be made regarding terminal availability for T&A input. This would be a fairly structured routine with certain time frames, therefore it would be essential that T&A clerks not only had access to a terminal but access during a particular period of time. Possibly components could redistribute this function so that the number of T&A clerks could be reduced thus reducing the quantity of terminals required and providing better internal controls.

Procedures would also have to be established concerning the approval of premium time and initials for employee leave charges.

Summary: While both OCR and CRT have potential use for recording time and attendance data it would appear that OCR would have less impact on the Agency components. It is recommended, however, that neither one be ruled out until in-depth studies can be

completed to determine their practical application.

3. Concept: Capture daily time and attendance data on a pay period basis.

Background: In order for a new payroll system to properly react to and process actions based on actual effective dates (other than the first day of a current pay period), process amended T&A,s, and record information necessary for maintenance of a viable Management Information System , it is necessary to input daily time and attendance data. Further justification and background on this is provided with background information for Concept #5 below.

4. Concept: Provide for terminal retrieval of daily T&A data by payroll technicians.

Background: Currently all specific data needed by a payroll technician concerning T&A codes must be obtained by physical review of the hardcopy T&A card. This involves an inordinate amount of time to locate specific T&A's needed to resolve questions presented in the T&A exception listings since all of the payroll technicians must work from the T&A cards stored in one location. Thus, even getting to the documents presents a problem since there are 16 technicians and at maximum only 3 of them can physically work with the T&A cards at any given time. In addition to needing access to T&A information to process reports payroll technicians are called upon to provide detailed data in response to ad hoc requests. While it is difficult to determine exactly how much time is devoted to the foregoing items due to physical constraints because of T&A card filing procedures, it is estimated that 1 work day per week is being spent to locate T&A cards.

5. Concept: Computer processing of amended T&A's and computer reaction to effective dates predicated on daily T&A information.

Background: [redacted] 25X1
any changes to pay entitlements that are effective on any date. other than the first day of the current pay period, must be processed by the payroll technician. This includes entitlements of base pay through payments for premium time hours, differentials and allowances.

Payroll utilizes approximately 960 work hours each biweek pay period preparing pay adjustments. It is estimated that of this total workload, approximately 614 work hours pertain to adjustments of entitlements because computer programs have not

been designed to compute entitlements based on amended T&A's, actual effective dates, [redacted] 25X1
In addition to the payroll time approximately 40 work hours of ODP time is needed for the four phase processing of these items. Presently these three categories of ajustments represent approximately 64% of all adjustment transactions manually prepared each biweek pay period by payroll technicians.

The addition of the new GSO pay scale may present further problems since almost every PCS arrival and departure will represent a potential adjustment. Thus it is very important that every effort be made to eliminate manual adjustments in the development of a new payroll system.

6.Concept: Provide capability for access, via terminal query, to all data from payroll's computerized history files.

Background: Management has a continuing need for MIS type information which is not readily predictable and certainly not defineable except at the time the need for the information arises. To provide for this eventuality, detail information on a pay case basis must be made available so that Management can structure its own query programs to extract information as the need arises.

Access to computer history files of [redacted] Leave, Tax, and T&A 25X1
information will meet this requirement (We would propose that each pay record include the rate of pay, station location, FAN, [redacted] that was in effect during each pay period). 25X1

7.Concept: Modify Biweek front end computer routine to capture certain NOCB data from interface files, and;

a. Pass to NOCB system via tape for master file input or,
b. Prepare hardcopy output in NOCB report format for delivery to and processing by NOCB.

Background: Under current procedures certain information applicable to NOCB pay cases, which is passed to payroll via computer interface, is not being utilized. The data passed on these cases are rejected and appear on the biweek payroll exception listing. This means that personal attention must be devoted by the biweek pay technicians to notify their NOCB counterparts of items requiring immediate action, otherwise waiting for hardcopy documentation could result in errroneous pay. Obviously this provides potential for some slippage and an effort should be made to utilize the available computer information on NOCB pay cases, at least as advance notice, so


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that actions can be effected or followed up on in a timely manner without regard to notification from the biweek pay technicians.

8.Concept: Redesign NOCB master file to interact with other systems.

Background: The operation in NOCB is primarily a manual one and should, for the most part, remain that way in order to provide the needed flexibility in handling the variety of pay cases they encounter. However, there are certain functions in NOCB which could be automated as a stand alone process, i.e., posting of leave records, or in conjunction with concepts to automate other payroll functions that would affect NOCB, i.e., automation of retirement record postings. Additionally, the capability to query pay/statistical data on NOCB pay cases should be an essential consideration in building a Management Information System. In order to accomplish the foregoing we believe it is necessary to build upon a Master file for NOCB pay cases.

9. Concept: Automate posting of retirement records (SF 2806.CSC and Form 3114.CIARDS).

Background: At present the posting of retirement records is a manual operation requiring approximately 1100 work hours per year. Automation of this process would considerably reduce the manual effort expended and the attendant potential for errors and misplaced records. Over a period of time it could also reduce the hard copy storage requirements since the appropriate information could be stored in the computer, producing hardcopy printout as needed. In order to use this concept to the maximum benefit the system should be able to capture and retain the necessary information on all types of employees covered under a government retirement program including those on the four-week payroll. This would require expansion of the NOCB master file per Concept #8 above.

10. Concept: Devise alternate methods (CRT or OCR) for AOB pay technicians to update master files and prepare TEMPO adjustments.

Background: Notwithstanding other concepts to automate many of the payroll operations through better use of interface and computer reaction to effective dates there would remain certain items requiring manual update by payroll technicians. At present this is a manual operation accomplished by preparation of hardcopy forms by the payroll technicians for processing via the four phase system. Thus errors in preparing the documents or the

preparation of duplicate adjustments are not generally detected until after the four-phase processing. Along with the proposed use of CRT or OCR for various other functions there appears to be potential for using either of these techniques to prepare pay updates and adjustments This could eliminate the preparation of duplicate adjustments and the payroll technicians could more effeciently query the status and ascertain the number of adjustments in process for the current pay period.

11. Concept: Provide payroll with CRT terminal roster query and update capability.

Background: In addition to the tremendous amount of mail received by payroll, that must be distributed to the appropriate pay technician for action, numerous telephone inquiries are made for individual pay information. This requires searching through hardcopy rosters in order to determine the section and roll number handling the individual. It would appear that a more efficient method could be devised through the use of a CRT terminal whereby basic information (alpha/numeric infomation, roll number, station code) could be displayed. An update capability could also be provided to simplify the addition of new names which cannot be obtained through interface. Production of the hardcopy rosters could be eliminated as well as a reduction in storage requirements.

12. Concept: Design Master File in the payroll system to accept additional data without major reprogramming.

Background: A new payroll system should contain sufficient flexibility to add new items without major reprogramming. This is especially important in payroll's effort to react quickly to new requirements that are continually levied upon them.

13. Concept: Expand electronic time and attendance reporting for Overseas and Domestic installations and NOCB pay cases to be consistent with the concepts in this study for capturing daily T&A data.

Background: Presently there are approximately [redacted] pay cases, including [redacted] part time and intermittent personnel overseas whose time and attendance data are reported on Duty Status Reports. For the most part this involves a manual payroll operation in that each DSR must be reviewed to determine the actual number of hours reported for regular time, premium time and leave charges. Oftentime due to pouch difficulties the time

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and attendance reports are not received on a current basis and NOCB payroll technicians must manually monitor missing reports. Payments for when actually employed personnel are also delayed waiting for DSR's and Performance Reports. It is estimated that approximately 250 work hours per four week pay period are spent on the processing of DSR's. While some of this time would still be needed to manually process data received electronically the information could be in hand much faster thereby providing a more timely basis for payments and follow-ups to the field. Electronic reporting would also enhance the automation of leave record posting for NOCB pay cases. The ETAR application overseas, while effective, should be revised to record daily T&A data.

14. Concept: Structure pay and leave data in appropriate manner to allow for more detailed fiscal and/or calendar year analysis and retrieval.

Background: Payroll is often called upon to provide various Agency components with detailed information necessary for developing certain budgetary information or responding to other ad-hoc requests. Many of these requests for information can be complied with only through manual efforts expended by the payroll technicians. Although the requests are valid it does detract from the technicians basic responsibility when time must be taken to analyze statistical data in order to meet these requirements. Providing for appropriate structuring and retrieval of payroll data would provide the capability for payroll to provide this detailed information when needed without a tremendous impact on the technician's time.

15. Concept: Devise a new input coding structure that will provide the capability to accept additional data items without the need for periodic revisions to the codes.

Background: Under the present payroll system, Data Identification Codes (DIC) are used to identify specific data elements to the computer processing programs so that these programs can execute in accordance with the nature of the information being processed. Currently specific areas of the DIC structure are reserved for specific categories of pay information (i.e., 001-099=Taxable Earnings, 101-199=Non-taxable Earnings, etc.). If there are no DIC's available in the non-taxable category, one in the taxable category cannot be used since the system is dependent on this structure. Thus incorrect processing would result unless ODP reprograms for this inconsistency in the coding structure. In the development of a new payroll system consideration should be given to a complete change in the coding

format so that revisions can be made with minimal impact on ODP and payroll operations.